Art. IX.—*Further Descriptions of the Tertiary Polyzoa of Victoria.—Part IX.*

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(With Plates XVI., XVII.).

[Read 2nd July, 1903].

Dimorphocella, nov. gen.

Two distinct forms of cells. Zooecial cells elongated or rhomboidal, distinct. Thyrostome arched above, with a sinus in the lower lip. Ooecial cells much larger than the zooecial, elongate, pyriform or oval, with a broad aperture and a perforated area in front.

I propose this genus for a form presently to be described, and Adeonella triton, McG., the systematic position of which he (Dr. MacGillivray) says admits of great doubt.[1] I do not consider it belongs to the genus he places it in, if his definition of it given in his catalogue of the Marine Polyzoa of Victoria, p. 27, be accepted. Busk in the Report of the "Challenger" Polyzoa, describes Adeoneae as a new family which he divides into two genera, Adeona and Adeonella, but the characters upon which he separates them are purely zoarial, and moreover, he states, "there is no difference whatever" in the zooecial characteristics of the genera. Consequently, as zooecial characteristics are more relied upon now than zoarial, the genus Adeonella I think must lapse. Dr. MacGillivray places Adeona in Microporellidae, and Adeonella in Escharidae, sub-family Mucronellinae, in his "Catalogue," and in his Monograph of the Tertiary Polyzoa of Victoria he places Adeonella in Schizoporellidae, but does not define it. Again, in the description of Adeonella, in the "Catalogue" the following character is mentioned, "peristome developing a process from each side below, the two meeting in the middle to leave a round suboral foramen opening into the throat in front of the operculum." Now, no mention is made of such a character in the *specific* description of A. triton, it is not shown in the figures (pl. ix., figs. 23 and 23*a*), and this charac-

1 Trans. Royal Society Victoria, vol. iv., p. 90.

ter does not appear in my specimen of it, or in D. pyriformis; the front wall of the zooecial cells has no foramen, and the peristome of A. triton is simply a slightly thickened margin, and in D. pyriformis it is almost imperceptible. Therefore, the zooecial cells in both these species being without a foramen, I do not consider they can rightly be placed in Adeonella, or that they belong to the Adeoneae, though closely allied.

Dimorphocella pyriformis, n. sp. (Pl. XVI., Fig. 1).

Zooecia rhomboidal, flat; margins linear, raised; a very few small pores round the margin. Thyrostome lofty, with slightly raised peristome; a deep narrow sinus in the proximal border. An avicularium on each side below the thyrostome, with the mandibles pointing horizontally, and nearly meeting in the median line. Ooecial cells large, pyriform, ventricose distally; aperture transverse, lenticular; an avicularium on each side below it with mandibles pointing horizontally inwards; a small perforated oval raised area below the aperture; a few minute pores, chiefly marginal.

Locality.—Mitchell River (J. Dennant).

This differs from Dimorphocella (Adeonella) triton, in the following respects: both the zooecial and the ooecial cells are smaller; in the infertile zooecia the avicularia are horizontal, not vertical; the thyrostome has a deep narrow sinus instead of a very broad one; the ooecial cells are pyriform, not oval, and the distal part is ventricose; the perforated area is small, somewhat raised; the aperture much smaller and narrower, and the pores on the surface are very small and easily overlooked.

I have drawn an ooecial cell and part of a zooecial one of D. triton (Fig. 2), to show the difference between the two species, and also because the ooecial cell has a more perfect perforated area than that shown in Dr. MacGillivray's figure. The two species are mounted on the same slide, as under a simple lens they appeared to be the same.

Phylactella cribrosa, n. sp. (Pl. XVI., Fig. 3).

Zoarium encrusting. Zooecia irregularly oval, covered with large perforations. Thyrostome oblong; peristome much raised and rugose.

Locality.—Wilkinson's, No. 4 (Hall and Pritchard).

A small fragment only. This is near P. porosa (McG.), but the zooecia are larger and there is no space devoid of pores below the thyrostome as in that species.

Schismopora circumvallata, n. sp. (Pl. XVI., Fig. 4).

Zoarium encrusting. Zooecia oval, ventricose; surface coarsely granular. Thyrostome arched distally, proximal margin straight, with a small sinus in the centre; peristome oval, very thick and much raised.

Locality.—Spring Creek (T. S. Hall).

I am doubtful whether to place this in Schismopora or Schizoporella, but the thyrostome is placed at a considerable distance below the highly raised peristome and in this respect agrees rather with Schismopora than with Schizoporella. I have only the fragment illustrated and the two lower zooecia do not appear to be perfect, the lower portion is probably broken away.

Schismopora otwayensis, n. sp. (Pl. XVI., Fig. 5).

Zoarium small, globular. Zooecia irregularly arranged, subimmersed, surface smooth. Thyrostome semicircular with a sinus in the proximal margin; peristome highly raised, being produced into a tubular, or subtubular elevated process on the distal margin, surmounted by an avicularium with the mandible pointing upwards; sometimes a small umbo, with a perforation, on the proximal margin. Large spatulate avicularia scattered among the zooecia. Ooecia hemispherical (kettledrum shaped), with flat vertical front wall.

Locality.—Cape Otway (Hall and Pritchard).

This resembles Cellepora granum but the thyrostome (or primary orifice) has a sinus in the proximal margin which removes it from Cellepora, and the avicularium is at the summit of the tubular process and not near the base.

Cellepora stellata, n.sp. (Pl. XVI., Fig. 6).

Zoarium discoid, raised in the centre. Zooecia oval; marginal ones produced distally, surface smooth, front somewhat flattened. Thyrostome sub-orbicular with distal margin incurved and an avicularium above.

Locality.—Orphanage Hill, Geelong (T. S. Hall), and Campbell's Point (J. F. Mulder).

The zooecia in the centre are generally imperfect, through erosion. This is near C. fossa, but differs from it in the zooecia not being so ventricose, and in having a flattened area in front.

The marginal zooecia project so as to give a stellate appearance to the zoaria.

Solenopora, nov. gen.

Zooecia ovoid. Thyrostome oval, within which is a tubular process with a circular pore on the summit. Ooecium large, globular, subimmersed.

This genus is very near Cellepora, but the tubular process is inside the thyrostome, a unique condition; some of the Celleporidae have one on the outside.

Solenopora tubulifera, n. sp. (Pl. Fig. 7).

Zoarium encrusting. Zooecia ovoid or pear-shaped, subimmersed, surface smooth. Thyrostome oval, with peristome produced distally supporting inside a tubular process (probably avicularian) with a circular pore at the summit: two raised tubular processes below the thyrostome and a few scattered pores near the base of the zooecia: spatulate avicularia scattered among the zooecia. Ooecia very large, globular, subimmersed with an irregularly elliptical aperture and a small raised disk below with an oval pore it it.

Locality.—Wilkinson's, No. 4 (Hall and Pritchard).

Retepora uniserialis, n. sp. (Pl. XVI., Fig. 8).

Zoarium dendroid (?). Zooecia in single series, oval, with narrow raised margins; surface smooth. Thyrostome arched distally, proximal margin straight, with deep narrow sinus in the centre; a spine on each side about the middle. An enormous, raised avicularium below, covering almost the whole surface of the zooecium; with sometimes two pores near the proximal end. Above the thyrostome is an oval smooth depression which is probably the base of an ooecium.

Locality.—Mitchell River (J. Dennant).

This is found in a very fragmentary state; the fragments being very long in proportion to their width, the zoaria were probably dendroid. On one, or both sides of the zooecia there is a perforation, irregularly shaped, which may have been caused by the fracture of an avicularium.

Retepora airensis, n. sp. (Pl. XVII., Fig. 9).

Zoarium reticulate (?). Zooecia about two or three abreast, elongated, irregularly hexagonal, with raised margins; surface slightly depressed and covered with concave granulations. Thyrostome suborbicular, with raised, wavy edged peristome, generally having a pointed mucro at the proximal edge. A large raised avicularium below, with slightly curved mandible pointing proximally. Dorsal surface vibicate, granulated.

Locality.—Aire Coastal Beds (Hall and Pritchard).

This, if reticulate, must have had the fenestrae very large, compared with the trabeculae, as the specimens are all in fragments and only a few show any signs of branching.

Retepora delicatula, n. sp. (Pl. XVII., Fig. 10 and 10*a*).

Zoarium dendroid (?). Zooecia in single series, elongate, oval; surface smooth. Thyrostome with raised, thin peristome with a deep sinus below. Very large, raised, vicarious avicularia with long slightly curved mandibles pointing proximally.

Locality.—Aire Coastal Beds (Hall and Pritchard).

This is a very delicate species and evidently dendroid; the avicularia are very prominent and rival the zooecia in size. The two figures given are of the same specimen tilted over laterally, the angular difference being about 45 deg.

Retepora arborescens, n. sp. (Pl. XVII., Fig. 11 and 11*a*).

Zoarium dendroid. Zooecia elongated, surface covered with large, convex granulations. Thyrostome suborbicular; peristome much raised, having a wide sinus proximally. Large, raised avicularia with long mandible pointing proximally on some portions only of zoarium. Dorsal surface vibicate, granulated.

Locality.— Mitchell River (J. Dennant).

This a very good example of a dendroid Retepora. The zoaria are generally without avicularia, but in the specimen of which a figure, natural size, is given about a third of the middle portion is covered with large, raised avicularia scattered over the surface interfering with the regularity of, and almost obscuring, the zooecia, but that part is not in good preservation so I have not figured them; on the lower and upper parts the zooecia are regularly disposed and without avicularia; the branches are not the some plane, the upper one recedes and the middle and right hand branches curve upwards.

Retepora complanata, n. sp. (Pl. XVII., Fig. 12 and 12*a*).

Zoarium reticulate, fenestrae elongated, oval. Zoecia subhexagonal, elongated, with raised margins; surface finely granulated. Thyrostome orbicular; peristome raised, with a mucro pointing inwards on the proximal margin where it expands in width and in the expansion there is a small pore, probably avicularian. Dorsal surface coarsely granulated, divided by raised vibices into very large areas.

Locality.—Mitchell River (J. Dennant).

This is characterised by the extreme simplicity of the form of the zooecia, and the very large areas on the dorsal surface.

This concludes the description of all those Cheilostomatous species that I have been able, up to the present time, to determine as new in the material, from the various Tertiary deposits, that has been kindly presented to me by Messrs. Hall, Pritchard, Dennant, Kitson and others. I have still a large number of specimens undetermined, but I have had sent to me a great many recent forms from South and North Australia, New Hebrides, and other localities which urgently demand my attention, and of which a cursory examination has shown me that many of them are new. I had intended postponing dealing with these until after I had described some new species of fossil Cyclostomata, but there is such a difference of opinion as to the proper classification of this order, and I see so much difficulty ahead in determining their position, that I will leave them for a time;

nevertheless, there is one new form which I now describe, because it is a very elegant and striking one.

Hornera airensis, n. sp. (Pl. XVII., Fig. 13 and 13*a*).

Zoarium dendroid, dichotomously branched, branches circular in section, growing on one side only (?), at an acute angle, and parallel to one another, causing the zoaria to assume a pinnate form, zooecia undefined, in a double row, apertures alternating; front surface with large oval perforations. Orifice circular; peristomes raised. Dorsal surface with oval pores in very regular parallel lines.

Locality.—Aire Coastal Beds (Hall and Pritchard).

This is a most elegant species; it is generally found very fragmentary, but in one lump of clay there was a specimen with several branches, which unfortunately broke up in the cleansing process.

This species in some measure shows the difficulty above alluded to, that there is in dealing with the Cyclostomata at present. The regularity of the disposition of the zooecial apertures would place it in Idmonea according to the older authorities; though as it is "free" (not encrusting or adherent) it would be placed by some later ones in Crisina; but as the walls of the zooecia are perforated in the same manner as those of Hornera I place it in that genus and would associate with it Idmonea hochstetteriana, Stol. The family Horneridae, to which this last genus (Hornera) belongs, Dr. Gregory, in his Catalogue of the Cretaceous Bryozoa in the British Museum, includes in a new sub-order Cancellata, which removes this genus far away from Idmonea.

EXPLANATION OF PLATES XVI., XVII.

Fig. 1.—Dimorphocella pyriformis, n. sp.
,, 2.—Dimorphocella triton, McG.
,, 3.—Phylactella cribrosa, n. sp.
,, 4.—Schismopora circumvallata, n. sp.

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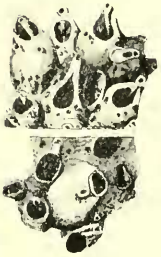

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